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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,939	02/23/2004	Erik J. Shahoian	IMMR-0052B	7661

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IMMERSION - THELEN REID & PRIEST L.L.P
THELEN REID & PRIEST L.L.P
P.O. BOX 640640
SAN JOSE, CA 95164-0640

EXAMINER

WU, XIAO MIN

ART UNIT	PAPER NUMBER
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2629

DATE MAILED: 06/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/782,939

Applicant(s)

SHAHOIAN ET AL.

Examiner

XIAO M. WU

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/4/06;9/30/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Double Patenting***

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-27 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-50 of U.S. Patent No. 6,184,868. Although the conflicting claims are not identical, they are not patentably distinct from each other because they both are claiming the actuator being configured to output a haptic feedback to the moveable portion of the housing.

Two representative claims from the US Patent No. 6,697,043 and the instant application are compared in the following:

Claim 17 of the US Patent No. 6,184,868	Claim 1 of the instant application
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Art Unit: 2629

17. A haptic feedback control device for inputting control signals to a computer and for outputting forces to a user of the control device, the control device comprising:	1. A device, comprising
a housing including a fixed portion and a moveable portion, wherein said user engages both said fixed portion and said moveable portion of said housing when using said device;	a housing having a fixed portion and a moveable portion, the moveable portion configured to move laterally with respect to the fixed portion;
a coupling coupled between said moveable portion and said fixed portion and allowing said moveable portion to move relative to said fixed portion in a direction parallel to an outer surface of said moveable portion, said portion of said outer surface being contacted by said user when said housing is grasped by said user; and	a coupling member coupled to the moveable portion and the fixed portion; and an actuator coupled to the coupling member,
an actuator coupled to said coupling, said actuator outputting a force on said coupling to cause said moveable portion to move with respect to said fixed portion.	the actuator configured to output haptic feedback to the moveable portion of the housing via the coupling member.

Form the side-by-side comparison above. It is noted that claim 1 is broadening from claim 17 of the US Patent No. 6,184,868. For example, claim 1 of the instant application does not claim the device for inputting control signals to a computer. However, it would have been

obvious to one of ordinary skill in the art to have realized that the actuator is controlled by the computer, so as to provide the feedback to the user.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-21 and 23-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Salcudean et al. (US Patent No. 5,790,108).

As to claim 1, Salcudean discloses a device, comprising: a housing (Fig. 1) having a fixed portion (12) and a moveable portion, the moveable portion (18) configured to move laterally with respect to the fixed portion (12); a coupling member (122, Fig. 7) coupled to the moveable portion (18) and the fixed portion (12); and an actuator (124, Fig. 7) coupled to the coupling member (122), the actuator (124) configured to output haptic feedback to the moveable portion of the housing via the coupling member (see col. 7, lines 19-41).

As to claim 2, Salcudean discloses the coupling member is a flexure member (128, 10, Fig. 7).

As to claim 3, Salcudean discloses the haptic feedback is output based on an oscillation of a shaft of the actuator (see Fig. 7).

As to claim 4, Salcudean discloses the coupling member includes a first flexure member (e.g. top portion of the spring 128, 130 as shown in Fig. 7) and a second flexure member (e.g.

bottom portion of the spring 128, 130 as shown in Fig. 7), the first flexure member and the second flexure member being coupled between the moveable portion and the fixed portion (see Fig. 7), the actuator being configured to output the haptic feedback via at least one of the flexure members (see Fig. 7).

As to claim 5, Salcudean discloses a manipulandum (18) disposed adjacent to the moveable portion, the haptic feedback being imparted to the manipulandum.

As to claim 6, Salcudean discloses a manipulandum (18, Fig. 7) disposed adjacent to the moveable portion, the haptic feedback being imparted to the manipulandum, the manipulandum is fixed in position with reference to the moveable portion (Fig. 7).

As to claim 7, Salcudean discloses a button (132, Fig. 8) disposed adjacent to the moveable portion, the haptic feedback being imparted to the button (col. 7, lines 42-50).

As to claim 8, Salcudean discloses a button (22, Fig. 7; 132, Fig. 8) movable in a degree of freedom disposed adjacent to the moveable portion, the haptic feedback being imparted to the button in the degree of freedom.

As to claim 9, Salcudean discloses a sensor (col. 4, lines 19-30) coupled to the housing, the sensor being configured to detect a movement of the moveable portion with respect to the fixed portion.

As to claim 10, Salcudean discloses a method, comprising: sending a control signal to a processor associated with a graphical display (see Figs. 11 and 12), the control signal based on a position of a button (22, Fig. 7; 132, Fig. 8) in a degree of freedom; receiving a haptic feedback signal from the processor, the haptic feedback signal being based on the control signal; outputting a first haptic feedback to the button in the degree of freedom, and outputting a second

Art Unit: 2629

haptic feedback to a moveable portion of a housing in which the button is disposed (e.g. the actuator can provide both haptic to the button 22, 132 and the housing of the user is contacting, see col. 9, lines 25-30).

As to claim 11, Salcudean discloses first haptic feedback is associated with an interaction of a controlled object with a first simulated object in the graphical environment, the second haptic feedback being associated with an interaction of the controlled object with a second simulated object in the graphical environment (see col. 9, lines 4-63).

As to claim 12, Salcudean discloses a device, comprising: a button (22, Fig. 7, 132, Fig. 8) depressible along a degree of freedom; an actuator (124) coupled to the button; a sensor (col. 7, lines 51-58) configured to detect a displacement of the button along the degree of freedom; and a processor (Fig. 10) coupled to the actuator and configured to send a signal to the actuator based on the detected displacement, the actuator (124) configured to generate the haptic feedback at least along the degree of freedom based on the signal.

As to claim 13, Salcudean discloses the actuator (124, Fig. 7) is a voice coil.

As to claim 14, Salcudean discloses the actuator (124) includes a coil coupled to the button and a magnet coupled to a housing in which the button is disposed (see Fig. 7).

As to claim 15, Salcudean discloses the actuator (124) includes a magnet coupled to the button and a coil coupled to a housing in which the button is disposed (see Fig. 7).

As to claim 16, Salcudean discloses the sensor is an analog sensor configured to output a position signal, the position signal associated with a position of the button (see col. 7, lines 51-58).

As to claim 17, Salcudean discloses haptic feedback includes a vibratory force produced

as a function of time (e.g. damping force).

As to claim 18, Salcudean discloses haptic feedback includes a spring force (128, 130, Fig. 7) produced as a function of the displacement of the button.

As to claim 19, Salcudean discloses the haptic feedback includes a damping force produced as a function of a velocity of the button because the button is connected to the spring.

As to claim 20, Salcudean discloses a flexure member (128, 130) coupled to the button and a housing in which the button is disposed.

As to claim 21, Salcudean discloses the button is integrated as part of a multi-directional manipulandum configured to control a graphical object (see Fig. 12).

As to claim 23, Salcudean discloses a housing, the button disposed in the housing; and a joystick coupled to the housing, the joystick configured to control a position of a graphical object (see Figs. 8 and 12).

As to claim 24, Salcudean discloses the haptic feedback is associated with one of a position and a movement of a graphical object in a graphical display (see Fig. 12).

As to claim 25, Salcudean discloses the processor is configured to communicate with a host computer, and send data associated with the detected displacement of the button (see col. 7, lines 51-59).

As to claim 26, Salcudean discloses the actuator being a first actuator (70, Fig. 1), the device further comprising a second actuator (72, Fig. 1) configured to output a vibration.

As to claim 27, Salcudean discloses isometric controller (e.g. mouse or joystick) configured to control a position of a cursor in a graphical display (see Fig. 12).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Salcudean et al. (US Patent No. 5,790,108).

As to claim 22, it is noted that Salcudean the force input device can be a mouse and a joystick but fails to mention a trackball. However, trackball is a well-known input device in the art. It would have been obvious to one of ordinary skill in the art to have applied the actuator of Salcudean for any kind of the cursor input device such as the trackball because the actuator can be fitted into different handheld input device

Information Disclosure Statement

7. The information disclosure statement filed 5/4/06, 9/30/04 and 2/23/04 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.


Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to XIAO M. WU whose telephone number is 571-272-7761. The examiner can normally be reached on 6:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, RICHARD HJERPE, can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

X.W.
June 23, 2006


XIAO M. WU
Primary Examiner
Art Unit 2629